

Claim 15

*Sale
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15. (Four Times Amended) A bearing pad assembly comprising:
a first housing having a bore extending through said first housing;
a first load bearing member coupled to said first housing and defining an
abutment surface opposite to said first housing;
a second housing having a bore extending through said second housing,
adapted to telescopically receive said first housing;
a second load bearing member coupled to said second housing and defining
an abutment surface opposite to said second housing; and
at least one compression spring in the shape of a torus positioned within said
first housing bore, for providing a force resisting compression generally at an
increasing rate when progressively compressed, thereby providing a low initial
resistance to compression, but a high ultimate resistance to compression in urging
said first and second abutment surfaces away from each other in response to a load
imposed on at least one of said abutment surfaces.

REMARKS

Claims 1, 3-8, 10-15 and 17-22 are pending, of which claims 1 and 15 are
amended herein.

Claim 15 is rejected under 35 U.S.C. § 112, second paragraph on grounds of
indefiniteness. The rejection is traversed and reconsideration is respectfully
requested, particularly in view of the clarifying amendments to the claims. Claim 15
is amended to remove the objected term "special". It is therefore believed that the §
112, second paragraph rejection is overcome.

Claims 15, 19 and 20 are rejected under 35 U.S.C. § 102(b) as being anticipated by Carlston (U.S. Pat. No. 4,998,997). The rejection is traversed and reconsideration is respectfully requested, particularly in view of the clarifying amendments to the claims.

Carlston shows a side bearing unit for a railroad car including a housing 54, a round top cap 32, and a pair of springs 36 and 38 accommodated therebetween. The springs are not in the form of a torus, but rather are C-shaped about a central axis. The C-shape permits the springs to fold and flex so that during a normal work cycle the slope of the force vs. travel curve remains as flat as possible. (See col. 3, line 64 to col. 4, line 1). The elastomeric spring is so designed so that throughout its total travel from free height, it is folding and flexing rather than compressing. (See col. 4, lines 15-19).

The present invention as recited in amended independent claim 15, on the other hand, is directed to a bearing pad assembly comprising at least one compression spring in the shape of a torus positioned within said first housing bore, for providing a force resisting compression generally at an increasing rate when progressively compressed, thereby providing a low initial resistance to compression, but a high ultimate resistance to compression in urging said first and second abutment surfaces away from each other in response to a load imposed on at least one of said abutment surfaces. Claim 15 is amended to more precisely recite the form of the spring as shown in the drawings. Specifically, the amended language includes "torus" which is defined by Webster's Third New International Dictionary to be "a surface or solid shaped like a doughnut and formed by revolving a circle about a line in its plane without intersecting it". The circular cross-section of the torus compression spring provides a force which resists compression generally at an increasing rate when progressively compressed (i.e., exhibits non-linearity), thereby providing a low initial resistance to compression, but high ultimate resistance to

compression -- two characteristics that are particularly advantageous for an application in damping the lateral roll of rail cars.

For an anticipation rejection to be appropriate, each and every element in the rejected claim must be shown in the prior art reference used in the rejection. Because Carlston does not disclose, teach or suggest the use of a torus spring to provide a force which resists compression generally at an increasing rate when progressively compressed, as recited in amended independent claim 15, it cannot be maintained that amended claim 15 is anticipated by Carlston. Moreover, because claims 19 and 20 each ultimately depend from and thereby incorporate the limitations of independent claim 15, these dependent claims are likewise deemed not anticipated for at least the reasons set forth for claim 15.

Claims 1, 3-8, 10-14, 17 and 18 are rejected under 35 U.S.C. § 103(a) as being unpatentable over Carlston (U.S. Pat. No. 4,998,997) in view of Magowan (U.S. Pat. No. 136,079) in view of Platkiewicz (U.S. Pat. No. 4,465,799) and further in view of Curtis (U.S. Pat. No. 5,036,774) and Spencer et al. (U.S. Pat. No. 5,086,707). The rejection is traversed and reconsideration is respectfully requested, particularly in view of the clarifying amendments to the claims.

Unlike the invention disclosed in Carlston, the present invention as recited in amended independent claim 1 is directed to a bearing pad assembly comprising at least one compression spring in the shape of a torus positioned within said first housing bore, for providing a force resisting compression generally at an increasing rate when progressively compressed, thereby providing a low initial resistance to compression, but a high ultimate resistance to compression in urging said first and second abutment surfaces away from each other in response to a load imposed on at least one of said abutment surfaces.

Apparently Magowan is cited for showing an India rubber spring including rings B that are each in the form of a torus. However, there is no teaching or suggestion with the references taken as a whole to substitute the rings in Magowan

for the springs shown in Carlston. This is not surprising since Carlston teaches away from the claimed invention. As stated above, the C-shaped springs in Carlston are so shaped to permit the spring to fold and flex so that during a normal work cycle the slope of the force vs. travel curve remains as flat as possible, and consequently so that throughout its total travel from free height, it is folding and flexing rather than compressing. The invention as set forth in claim 1, on the other hand, provides at least one compression spring in the shape of a torus positioned within said first housing bore, for providing a force resisting compression generally at an increasing rate when progressively compressed, thereby providing a low initial impulse, but a high ultimate resistance to compression.

Platkiewicz is directed to a low friction slide lining composition; Curtis shows a long-travel side bearing for an articulated railroad car, and Spencer is directed to a self adjusting constant contact side bearing for railcars. Apparently these references, according to the Examiner, are cited for teaching motivation for providing a slip lining to the bearing pad assembly as recited in claim 1. However, there is no teaching or motivation in these references or the other cited references for providing a bearing pad assembly including at least one compression spring positioned within a first housing bore, wherein said compression spring comprises a solid resilient material having a torus shape for urging said first and second load bearing members away from one another in response to a load being imposed upon at least one of said first and second abutment surfaces, as recited in amended claim 1.

In summary, the teaching of Carlston, Magowan, Platkiewicz, Curtis and Spencer taken either alone or in combination is insufficient to render amended claim 1 obvious. Because claims 3-8, 10-14, 17 and 18 each ultimately depend from and thereby further limit claim 1, these dependent claims are likewise deemed unobvious for at least the reasons set forth for amended claim 1.

Claims 15, 19 and 20 are rejected under 35 U.S.C. § 103(a) as being unpatentable over Carlston (U.S. Pat. No. 4,998,997) in view of Magowan (U.S. Pat.

No. 136,079). The rejection is traversed and reconsideration is respectfully requested, particularly in view of the clarifying amendments to the claims.

The same reasoning applied above with respect to the Carlston and Magowan references with respect to the rejection of claim 1 apply equally here. For the above-mentioned reasons the teaching of Carlston and Magowan taken either alone or in combination is insufficient to render amended independent claim 15 obvious. Because claims 19 and 20 each ultimately depend from and thereby incorporate the limitations of claim 15, these dependent claims are likewise deemed unobvious for at least the reasons for claim 15.

Claims 21 and 22 are rejected under 35 U.S.C. § 103(a) as being unpatentable over Carlston (U.S. Pat. No. 4,998,997) in view of Platkiewicz (U.S. Pat. No. 4,465,799) and further in view of Curtis (U.S. Pat. No. 5,036,774) and Spencer et al. (U.S. Pat. No. 5,086,707). The rejection is traversed and reconsideration is respectfully requested, particularly in view of the clarifying amendments to the claims. Because claims 21 and 22 each ultimately depend from amended independent claim 15, these dependent claims are likewise deemed unobvious for at least the reasons set forth for the independent claim.

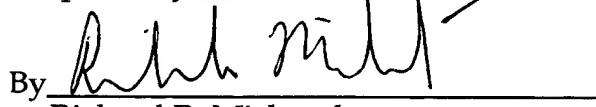
Claims 21 and 22 are rejected under 35 U.S.C. § 103(a) as being unpatentable over Carlston (U.S. Pat. No. 4,998,997) in view of Magowan (U.S. Pat. No. 136,079) in view of Platkiewicz (U.S. Pat. No. 4,465,799) and further in view of Curtis (U.S. Pat. No. 5,036,774) and Spencer et al. (U.S. Pat. No. 5,086,707). The rejection is traversed and reconsideration is respectfully requested, particularly in view of the clarifying amendments to the claims. Because claims 21 and 22 each ultimately depend from and thereby include the limitations of amended independent claim 15, claims 21 and 22 are likewise deemed unobvious for at least the reasons set forth for claim 15.

In view of the foregoing, it is respectfully submitted that amended claims 1, 3-8, 10-15 and 17-22 are allowable. All issues raised by the Examiner having been addressed, an early action to that effect is earnestly solicited.

No fees or deficiencies in fees are believed to be owed. However, authorization is hereby given to charge our Deposit Account No. 13-0235 in the event any such fees are owed.

Respectfully submitted,

By



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Marked-up Version of Amendments

A marked-up version of the amendments is set forth below showing additions with underlining and deletions between brackets.

In the Claims:

Claim 1

1. (Four Times Amended) A bearing pad assembly comprising:
 - a first housing having an exterior surface and defining a bore extending at least part-way through said first housing;
 - a first load bearing member coupled to said first housing, and defining an outwardly facing first abutment surface;
 - a second housing defining a bore of a shape similar to said exterior surface of said first housing and adapted to slideably receive said first housing therein;
 - a second load bearing member coupled to said second housing and defining an outwardly facing second abutment surface opposite to said first abutment surface;
 - at least one slip lining positioned between said first housing exterior surface and a bore wall defining said second housing bore; and
 - at least one compression spring positioned within said first housing bore, wherein said compression spring comprises a solid resilient material having a [toroidal] torus shape for [urging] providing a force resisting compression generally at an increasing rate when progressively compressed, thereby providing a low initial resistance to compression, but a high ultimate resistance to compression in urging said first and second load bearing members away from one another in response to a load being imposed upon at least one of said first and second abutment surfaces.

Claim 15

15. (Four Times Amended) A bearing pad assembly comprising:

a first housing having a bore extending through said first housing;

a first load bearing member coupled to said first housing and defining an abutment surface opposite to said first housing;

a second housing having a bore extending through said second housing, adapted to telescopically receive said first housing;

a second load bearing member coupled to said second housing and defining an abutment surface opposite to said second housing; and

at least one compression spring in the shape of a [special toroidal shape ring] torus positioned within said first housing bore, for [urging] providing a force resisting compression generally at an increasing rate when progressively compressed, thereby providing a low initial resistance to compression, but a high ultimate resistance to compression in urging said first and second abutment surfaces away from each other in response to a load imposed on at least one of said abutment surfaces.